

WHAT IS CLAIMED IS:

1. A fold-type data processing apparatus comprising a first unit, a second unit and a hinge mechanism for coupling together said first unit and said second unit and allowing said second unit to turn and swivel with respect to said first unit via said hinge mechanism, said hinge mechanism
5 comprising:

a shaft having a first axis mounting thereon said second unit for allowing said second unit to be turned around said first axis;

10 a swiveling member fixed onto said first unit and allowing said shaft and said second unit to swivel with respect to said first unit around a second axis perpendicular to said first axis;

at least one projection member fixed onto said shaft; and

15 a control member fixed onto said first unit and having a side wall, at least a portion of said side wall having a slanted surface,

wherein said projection member abuts said side wall to restrict a movement of said second unit.

2. The fold-type data processing apparatus according to claim 1, wherein said control member comprises a swivel stopper formed on said side wall for preventing said second unit from swiveling around said second axis.

3. The fold-type data processing apparatus according to claim 2, wherein said swivel stopper is a slot for receiving at least a portion of said

projection member.

4. The fold-type data processing apparatus according to claim 2, wherein said swivel stopper is a plane formed on said side wall for abutting said projection member.
5. The fold-type data processing apparatus according to claim 1, wherein said projection member abuts said side wall of said control member to restrict an attitude angle between said first unit and said second unit upon said turning of said second unit around said shaft.
6. The fold-type data processing apparatus according to claim 5, wherein said attitude angle is restricted at a specified angle between 160 degrees and 170 degrees upon said turning of said second unit.
7. The fold-type data processing apparatus according to claim 5, wherein said projection member moves along said side wall of said control member while abutting thereto when said second unit is swiveled with respect to said first unit, thereby restricting said attitude angle.
8. The fold-type data processing apparatus according to claim 7, wherein said attitude angle is changed between said specified angle and 180 degrees when said second unit is swiveled with respect to said first unit.
9. The fold-type data processing apparatus according to claim 8,

wherein said attitude angle is changed from said specified angle to said 180 degrees, when said second unit is swiveled with respect to said first unit by a swiveled angle of 180 degrees after turning of said second unit from a
5 folded position.

10. The fold-type data processing apparatus according to claim 8, wherein said attitude angle is changed from said specified angle to said 180 degrees, when said second unit is swiveled with respect to said first unit by a swiveled angle of 90 degrees after turning of said second unit from a
5 folded position.

11. The fold-type data processing apparatus according to claim 1, wherein said control member is of a trapezoid in a longitudinal sectional view thereof.

12. The fold-type data processing apparatus according to claim 1, wherein said projection member abuts said side wall in an abutment plane aligned with a radial direction of said shaft.

13. The fold-type data processing apparatus according to claim 1, wherein said second unit mounts thereon a display unit, said at least one projection member includes first and second projection members apart from one another in a turning direction of said second unit, said first projection member abuts a first portion of said control member when said second unit is folded onto said first unit with said display unit opposing
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said second unit, said second projection member abuts a second portion of said control member when said second unit is unfolded from said first unit by turning.

14. The fold-type data processing apparatus according to claim 13, wherein said first portion includes a swivel stopper for restricting a swivel movement of said second unit upon abutment of said first or second projection member to said first portion of said control member.

15. The fold-type data processing apparatus according to claim 13, wherein each of said first and second projection members has an abutment surface having a tangent line extending in a radial direction of said shaft, and said side wall of said control member has a tangential line extending in said radial direction.

5 16. A hinge mechanism comprising:

 a base;

 a shaft having a first axis;

 a first support member for supporting said shaft and allowing said

5 shaft to rotate around said first axis;

 a second support member for supporting said first support member with respect to said base and allowing said first support member and said shaft to swivel with respect to said base around a second axis perpendicular to said first axis; and

10 a cam assembly for converting a swivel movement of said shaft with

respect to said base to a rotational movement of said shaft.

17. The hinge mechanism according to claim 16, wherein said cam assembly comprises at least one projection member fixed onto said shaft and a control member fixed onto said base and having a side wall, at least a portion of said side wall having a slanted surface, and wherein said 5 projection member abuts said slanted surface to restrict a movement of said shaft.

18. The hinge mechanism according to claim 16, wherein said cam assembly comprises:

first and second projection members fixed onto said shaft; and
a control member having a side wall and fixed onto said base, said 5 control member having a shape of trapezoid as viewed parallel to said first axis, wherein:

said first projection member abuts a first portion of said side wall in a closed position of said hinge mechanism;

10 said second projection member abuts a second portion of said side wall in an open position of said hinge mechanism;

said second projection moves along said side wall while abutting thereto upon a swivel movement of said first support member and said shaft to restrict a rotational movement of said shaft